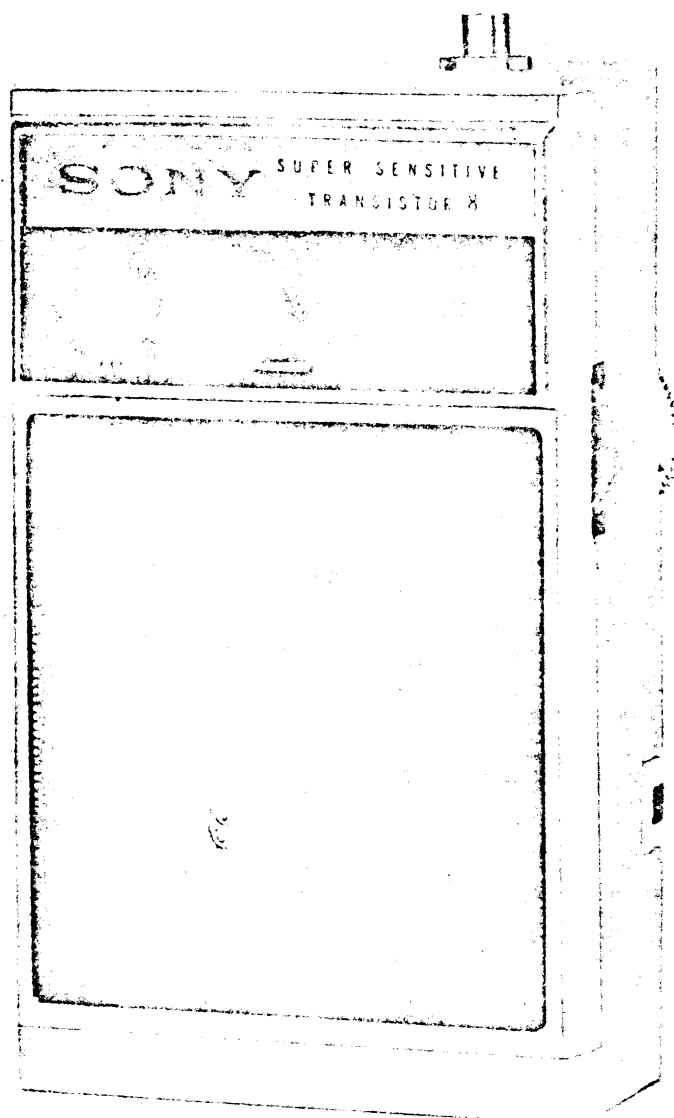


TR-830

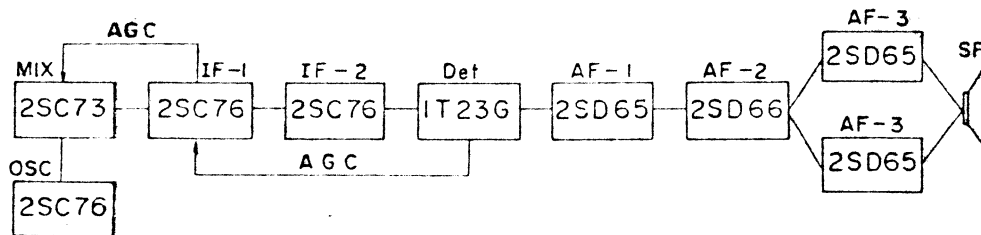


Specifications

Circuit: 8 Transistor Superheterodyne
Frequency Coverage: MW 530—1,605 Kc (566—187 m)
Intermediate Frequency: 455 Kc
Antenna System: Built-in Ferrite Bar Antenna
Maximum Sensitivity: 34 dB (50 μ V/m)
(at 10mW output)
Selectivity: 17 dB at 10 Kc off resonance, at 1,400 Kc
Output Power: 130 mW (undistorted)
Current Drain: 7.0 mA at zero signal, 33 mA at 130 mW output
Speaker: 2-3/8" (6 cm) PM dynamic, 8 Ω
Battery: Eveready 216 (006P) or Equivalent (9 Volts)
Dimensions: 4-3/8" \times 2-5/8" \times 1-3/8" (109 \times 67 \times 36 mm)
Weight: 0.60 lb. (0.27 kg.)

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Block Diagram

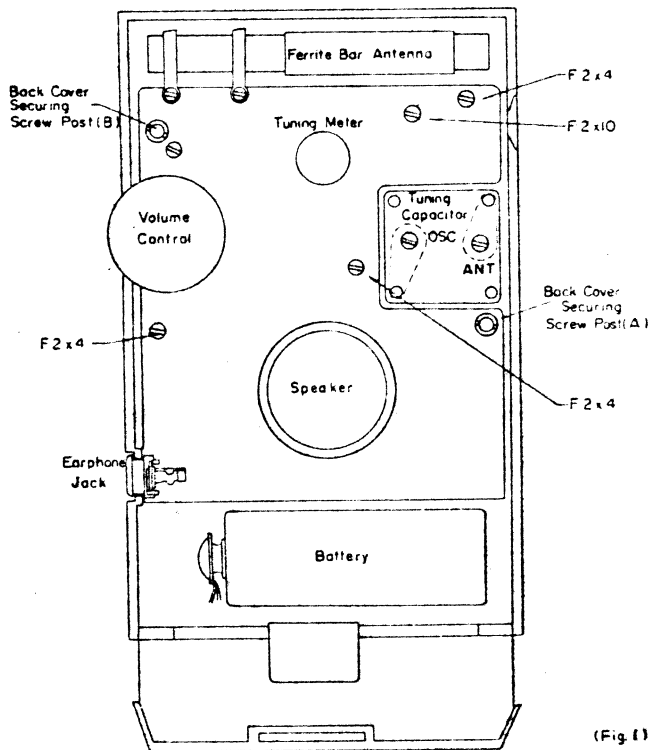


To Remove the Circuit Board from the Cabinet

- (1) Open the Battery Lid and take out the Battery.
- (2) Remove the two Back Cover Holding Screws (A) (K2 X 4) and open the Back Cover.
- (3) Remove the Tone Setting Switch from the Back Cover by pulling straight out.
- (4) Remove the Earphone Jack from the Cabinet by pulling straight out.
- (5) Remove the two Back Cover Securing Screw Posts (B) and the Circuit Board Holding Screw (F2 X 10) indicated by red arrows in Fig. 1.
- (6) Unsolder the two leads (a white and a black) for the Speaker at the speaker terminals.

To Remove the Tuning Capacitor Holding Plate from the Chassis

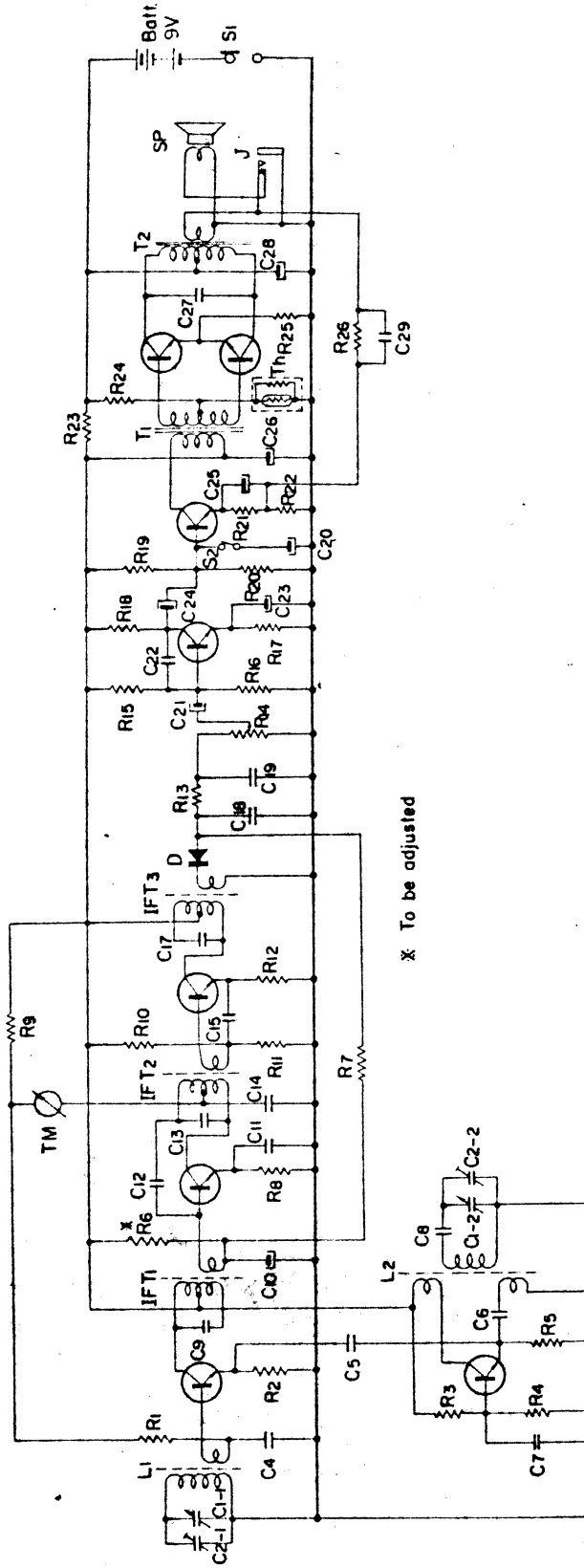
- (1) Unsolder the two leads (a white and a red) for the Tuning Meter at the Circuit Board.
- (2) Unsolder the three leads of the Tuning Capacitor at its terminals.
- (3) Remove the three Tuning Capacitor Holding Plate Set Screws (F2 X 4) indicated by red arrows in Fig. 1.



(Fig. 1)

Schematic Diagram

X1 2SC73 X3 2SC76 X4 2SC76 X5 2SD65 X6 2SD66 X7 2SD65



X To be adjusted

X2 2SC76

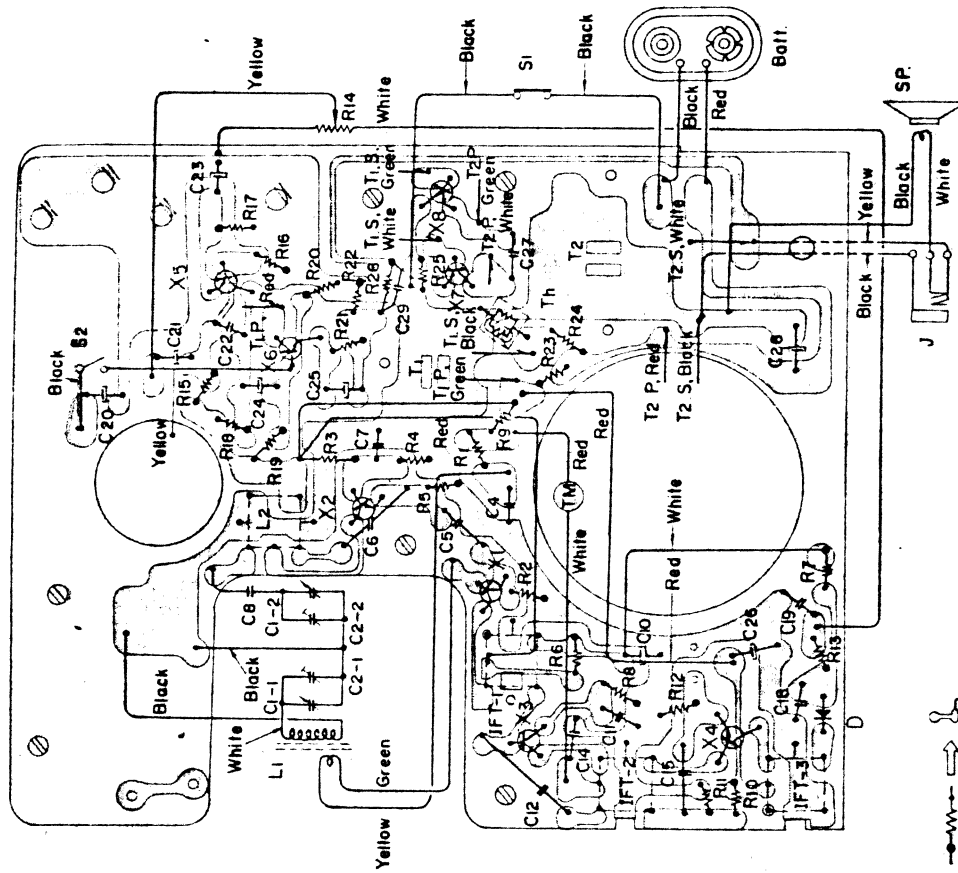
Electronic Parts List

Part No.	Symbol	Description	Part No.	Symbol	Description	Part No.	Symbol	Description
1-401-189-11	L ₁	Ferrite Bar Antenna	1-203-635-00	R ₃	39K Ω $\frac{1}{4}$ W Carbon	1-101-073-14	C ₃	—deleted—
1-405-113-11	L ₂	Oscillator Coil	-425-00	R ₄	5.6K Ω "	1-105-104-11	C ₄	0.02 μ F Ceramic
1-403-025-02	IFT ₁	IF Transformer	-423-00	R ₅	2.2K Ω "	-104-11	C ₅	0.002 μ F Mylar
-026-02	IFT ₂	"	-431-00	*R ₆	120K Ω "	1-101-072-12	C ₆	0.002 μ F "
-027-02	IFT ₃	"	-425-00	R ₇	5.6K Ω "	1-103-024-11	C ₇	0.01 μ F Ceramic
1-423-062-16	T ₁	Driver Transformer	-420-00	R ₈	470 Ω "	1-121-103-00	C ₈	130PF Styrol
1-427-090-12	T ₂	Output Transformer	-427-00	R ₉	10K Ω "	1-101-073-14	C ₉	150PF (built in IFT ₁)
1-502-093-12	SP	Speaker	-635-00	R ₁₀	39K Ω "	-009-13	C ₁₀	10 μ F 3V Electrolytic
1-507-050-03	J	Earphone Jack	-434-00	R ₁₁	3.3K Ω "	1-101-072-12	C ₁₁	0.02 μ F Ceramic
1-520-002-00	TM	Tuning Meter	-420-00	R ₁₂	470 Ω "	1-101-073-14	C ₁₂	1PF "
1-513-152-00	S ₁	Power Switch	-339-00	R ₁₃	1.8K Ω "	1-101-072-12	C ₁₃	150PF (built in IFT ₂)
-075-11	S ₂	Tone Selector Switch	1-221-096-00	R ₁₄	5K Ω Volume Control	-072-12	C ₁₄	0.01 μ F Ceramic
1-528-006-00	Batt.	Battery (9V)	1-203-593-00	R ₁₅	36K Ω $\frac{1}{4}$ W Carbon	—deleted—	C ₁₅	0.01 μ F "
			-425-00	R ₁₆	5.6K Ω "	1-101-073-14	C ₁₆	—deleted—
	X ₁	Transistor 2SC73	-421-00	R ₁₇	1K Ω "	1-101-073-14	C ₁₇	150PF (built in IFT ₃)
	X ₂	" 2SC76	-421-00	R ₁₈	1K Ω "	-072-12	C ₁₈	0.02 μ F Ceramic
	X ₃	" 2SC76	-428-00	R ₁₉	27K Ω "	1-121-199-11	C ₁₉	0.01 μ F "
	X ₄	" 2SC76	-427-00	R ₂₀	10K Ω "	-103-00	C ₂₀	0.3 μ F 15V Electrolytic
	X ₅	" 2SD65	-421-00	R ₂₁	1K Ω "	1-105-043-11	C ₂₁	10 μ F 3V "
	X ₆	" 2SD66	-418-00	R ₂₂	10 Ω "	1-121-103-00	C ₂₂	0.005 μ F Mylar
	X ₇	" 2SD65	-419-00	R ₂₃	220 Ω "	-134-00	C ₂₃	10 μ F 3V Electrolytic
	X ₈	" 2SD65	-426-00	R ₂₄	7.5K Ω "	-101-00	C ₂₄	10 μ F 6V "
	D	Diode 1123G	-418-00	R ₂₅	10 Ω "	-110-00	C ₂₅	30 μ F 3V "
	Th	Thermistor CS-120	-610-00	R ₂₆	680 Ω "	1-101-074-12	C ₂₆	30 μ F 10V "
		Resistor			Capacitor	1-121-128-00	C ₂₇	0.04 μ F Ceramic
1-203-427-00	R ₁	10K Ω $\frac{1}{4}$ W Carbon	1-151-085-11	C ₁₋₁₋₂	Tuning Capacitor, 2 gang	1-101-073-14	C ₂₈	50 μ F 10V Electrolytic
-633-00	R ₂	30K Ω "		C ₂₋₁₋₂	Trimmer Capacitor, 2 unit		C ₂₉	0.02 μ F Ceramic

* To be adjusted

Mounting Diagram

— Printed Side —



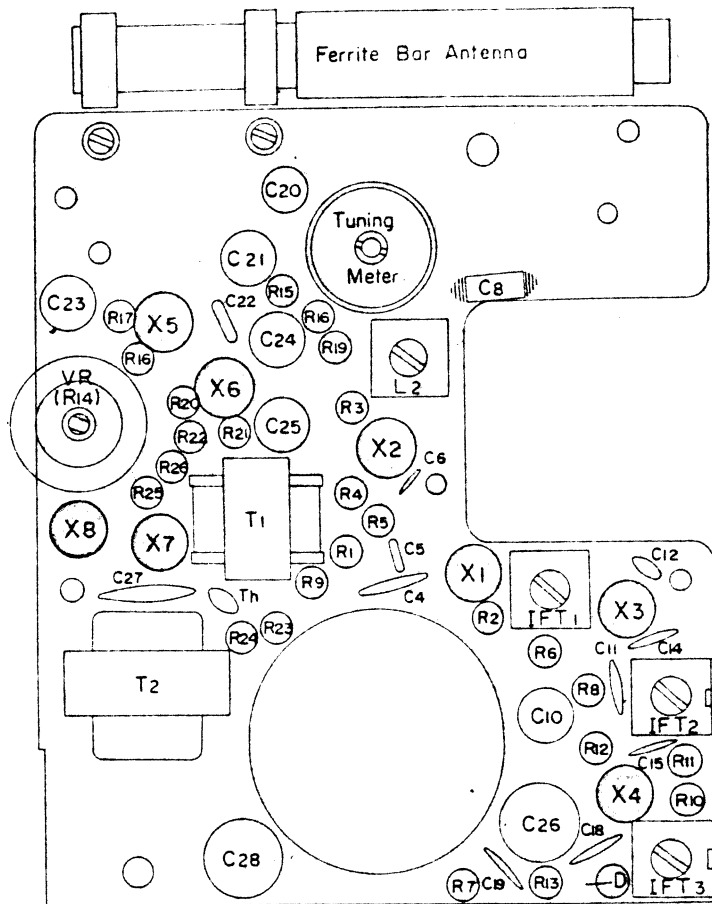
C29 is mounted on the printed side.

T1.P. : T1. Primary T2.P. : T2 Primary

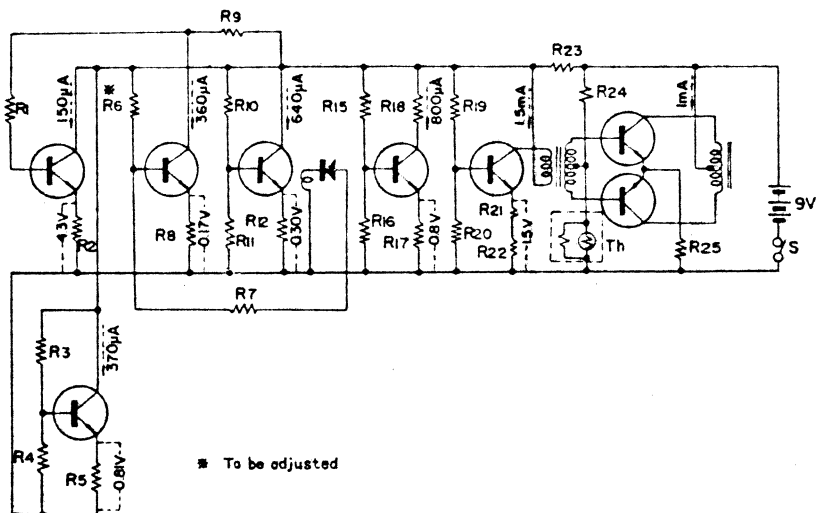
T1.S. : T1. Secondary T2.S. : T2 Secondary

Modular Design

— Parts Side —



Voltage and Current Distribution Chart at Zero Signal



Preparation

Receiver to be aligned

Power source voltage :	Keep 9 Volts during the alignments.
Volume control setting :	Maximum
Tone control switch setting :	High (upper position)
Load for output :	Connect 8Ω resistor instead of Speaker.
Signal source :	Use SSG (Standard Signal Generator) which can deliver RF signals modulated at 30% with 1,000 c/s or 400 c/s.
Output meter :	Connect across the Load Resistor 8Ω . (VTVM can be used also)
Radiating antenna :	Use loop type.

Note :

When the Back Cover is removed, the Tone Control Switch tends to come off the Cabinet together with the Back Cover.

During the Tracking Alignment procedure, fix the Tone Control Switch to the Cabinet at its position temporarily with non-metallic material such as adhesive tape.

Otherwise mis-alignment will be resulted.

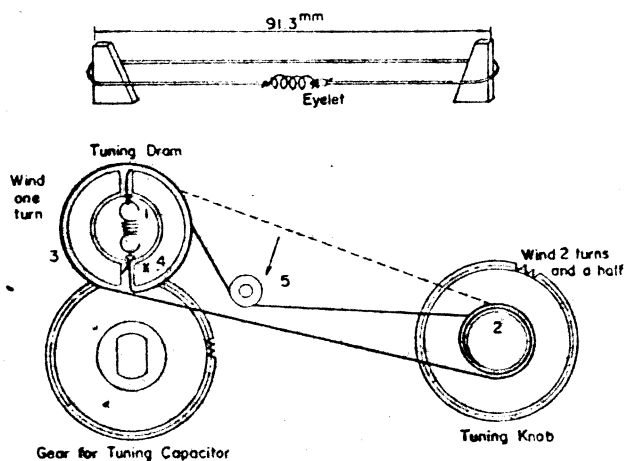
Frequency Coverage Alignment

- (1) Deliver 520 Kc signal from the SSG.
- (2) Set the Tuning Capacitor at the maximum capacitance position by turning the Tuning Knob of the Receiver counter-clockwise.
- (3) Adjust the core of the OSC Coil (L2) to tune to the signal.
- (4) Set the Tuning Capacitor at the minimum capacitance position by turning the Tuning Knob of the Receiver clockwise.
- (5) Deliver 1,680 Kc signal from the SSG.
- (6) Adjust the OSC Trimmer Capacitor (C2-2) to tune to the signal.
- (7) Repeat the above procedures (1—6) to obtain satisfactory result.

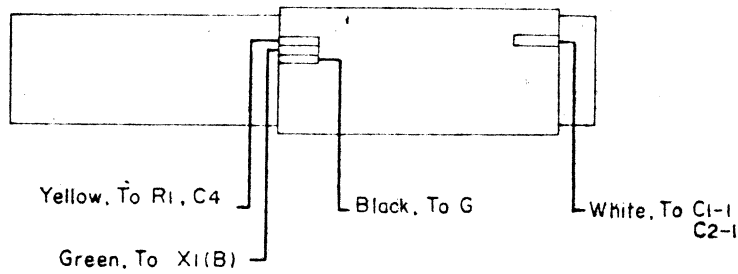
Sensitivity Alignment

- (1) Deliver 620 Kc signal from the SSG.
- (2) Tune to the signal by turning the Tuning Knob of the Receiver.
- (3) Adjust the position of the ANT Coil (L1) along the Ferrite Bar to obtain the maximum output.
- (4) Deliver 1,400 Kc signal from the SSG.
- (5) Tune to the signal by turning the Tuning Knob of the Receiver.
- (6) Adjust the ANT Trimmer Capacitor (C2-1) to obtain the maximum output.
- (7) Repeat the above procedures (1~6) until the maximum output is obtained.

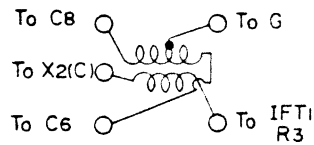
To String the Dial Cord



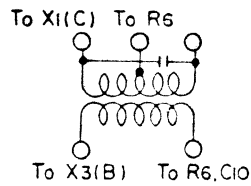
L1 Ferrite Bar Antenna



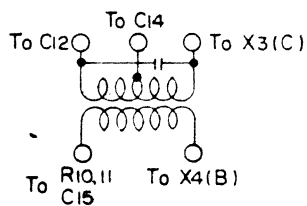
L2 OSC Coil



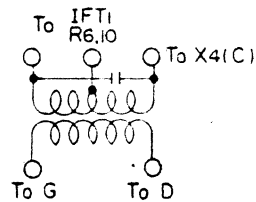
IFT1



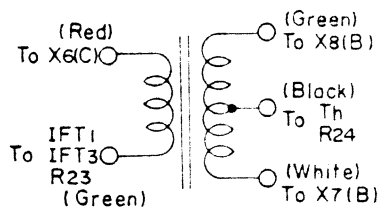
IFT2



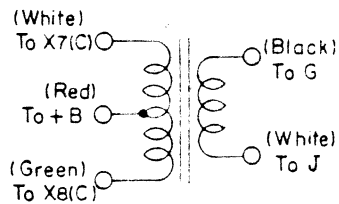
IFT3



T1 Driver Transformer



T2 Output Transformer



	Impedance	DC Resistance		Impedance	DC Resistance
Primary	3.9K Ω	330 Ω	Primary	820 Ω	105 Ω
Secondary	1.8K Ω	180 Ω	Secondary	8 Ω	1.1 Ω

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